

Antecedents and Mechanisms of Workplace Loneliness

Authors: Xiao Chen, Peng Jian, 聂琦, Peng Jian

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Abstract

With the extensive adoption of information technology in organizations and increasing work intensity, authentic face-to-face social interactions among employees have been on the decline. In this context, workplace loneliness among employees has become increasingly prevalent, drawing considerable attention from practitioners in organizational management. However, academia still lacks a comprehensive understanding of how to prevent and cope with workplace loneliness. This article employs regulatory fit theory to explain the antecedents and influence mechanisms of workplace loneliness, aiming to provide strategies for its prevention and coping. Using regulatory fit theory as a framework, this article will focus on three research questions: (1) How does (mis)fit between leaders' and subordinates' regulatory foci influence workplace loneliness through its impact on leader-member exchange; (2) How does (mis)fit between employees' and teams' regulatory foci influence workplace loneliness through its impact on team-member exchange; and (3) How employees select coping strategies for workplace loneliness based on different team regulatory climates, and how these choices affect subsequent performance.

Full Text

Preamble

The Antecedents and Mechanisms of Workplace Loneliness: A Regulatory Fit Theory Perspective

CHEN Xiao¹, PENG Jian², NIE Qi³

(¹ School of Business, Guangdong University of Foreign Studies, Guangzhou, Guangdong, 510006)

(² School of Management, Guangzhou University, Guangzhou, Guangdong, 510006)

(³ College of Economics and Management, Nanjing University of Aeronautics and Astronautics, Nanjing, Jiangsu, 211106)

Abstract

With the widespread adoption of information technology and increasing work intensity, employees have fewer opportunities for genuine, face-to-face social interaction. In this context, workplace loneliness has become a common occurrence, attracting considerable attention from management practitioners. However, academic understanding of how to prevent and address workplace loneliness remains limited. This paper employs regulatory fit theory to explain the causes and effects of workplace loneliness, aiming to provide strategies for its prevention and mitigation. Using regulatory fit theory as a framework, this article examines three research questions: (1) How does (mis)match between leader and follower regulatory focus influence workplace loneliness through leader-member exchange? (2) How does (mis)match between employee and team regulatory focus influence workplace loneliness through team-member exchange? (3) How do employees select coping strategies for workplace loneliness based on different team regulatory climates, and how do these strategies subsequently affect performance?

Keywords: workplace loneliness, regulatory focus, regulatory fit theory, workplace interpersonal relationships, social behavior

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1. Problem Statement

As social animals, humans have fundamental needs for social interaction and intimate relationships. When these needs remain unmet, individuals experience loneliness (Perlman & Peplau, 1981). The workplace occupies more than half of our waking hours and serves as a crucial context for fulfilling social needs. However, with the proliferation of electronic communication technologies, increased work intensity, heightened job competition, and frequent job transitions, opportunities for authentic face-to-face social interaction among employees have declined. According to a 2017 survey by the Maimai Data Research Institute, 61.47% of professionals reported experiencing loneliness at work, while only 38.53% reported no such feelings. These findings indicate that many employees' social needs remain unfulfilled in the workplace, making workplace loneliness a pervasive problem (Lü et al., 2015; Li & Ye, 2015).

Workplace loneliness negatively impacts both employees and organizations. Research shows that it undermines employee well-being and positive attitudes (Ozcelik & Barsade, 2018; Anand & Mishra, 2021; Erdil & Ertosun, 2011; Mohapatra et al., 2020) and triggers a range of detrimental work outcomes, including reduced job performance, diminished innovative behavior, counterproductive work behavior, and increased turnover intentions (Ozcelik & Barsade, 2018; Peng et al., 2017; Promsri, 2018). Clearly, workplace loneliness poses a poten-

tial threat to an organization's human capital. Consequently, preventing and addressing workplace loneliness represents an urgent priority for both academics and practitioners.

Current research on workplace loneliness has primarily focused on its negative consequences. While these studies have raised organizational awareness about the issue, they have not systematically addressed how to prevent and cope with workplace loneliness. Cacioppo et al. (2014) argue that loneliness, as a negative emotion, serves evolutionary functions—much like fear signals environmental threats and anxiety motivates goal-directed action. Negative emotions signal unmet needs and trigger coping behaviors. Following this logic, workplace loneliness conveys a signal that “belongingness needs remain unfulfilled,” thereby activating employees' coping systems. Nevertheless, the academic community knows little about how employees actually cope with workplace loneliness. To guide effective coping strategies, it is essential to treat employees as proactive agents and examine the relationship between workplace loneliness and coping behaviors, thereby providing constructive solutions.

Moreover, prevention is better than cure. Rather than focusing solely on guiding employees to cope with workplace loneliness, we should consider how to prevent and curtail its emergence at the source. Previous research has identified both personal and environmental antecedents of workplace loneliness. Specifically, personal factors that hinder the development of high-quality workplace relationships (e.g., personality, attitudes, and motivation; Saklofske et al., 1986; Cheek & Busch, 1981; Wilt et al., 2017; Elliot et al., 2006; Park & Baumeister, 2015), environmental factors that impede coworker interaction (e.g., excessive work stress, lack of resources; Altaf & Awan, 2011; Bell et al., 1990; Howard & Mallory, 2008; Galek et al., 2011; Wright, 2005), and negative interpersonal climates (e.g., competitive or fearful climates; negative interpersonal events such as ostracism and bullying; Wan & Cui, 2019; Erdil & Ertosun, 2011; Kuriakose et al., 2019; Li et al., 2019) all contribute to workplace loneliness.

These studies highlight that workplace loneliness fundamentally stems from the absence of high-quality workplace relationships. But what constitutes a high-quality relationship? Wright and Silard (2021) propose that when employees' actual workplace relationships fall short of their expectations, they perceive these relationships as deficient and consequently experience loneliness. This perspective reflects workplace loneliness as a psychological experience resulting from unfulfilled social goals. Following this logic, we argue that beyond simply examining how personal and environmental factors cause workplace loneliness, a novel research perspective involves understanding its antecedents and mechanisms through the lens of self-regulation in personal goal pursuit. This self-regulatory process can fully reveal how employees' pursuit of social goals influences the formation of workplace loneliness and subsequent coping behaviors. Therefore, we contend it is necessary to introduce regulatory fit theory—a theory closely related to goal pursuit and self-regulation—into workplace loneliness research to deepen our understanding of its prevention and mitigation.

In summary, this paper draws on regulatory fit theory to investigate three important research questions: (1) How does (mis)match between subordinate and leader regulatory focus (promotion vs. prevention) influence workplace loneliness through leader-member exchange? (2) How does (mis)match between employee and team regulatory focus influence workplace loneliness through team-member exchange? (3) How does team regulatory climate influence the relationship between workplace loneliness and coping behaviors, and what are the subsequent effects on employee innovative and relational performance?

2.1 Literature Review on Workplace Loneliness

This section reviews relevant literature on workplace loneliness from four perspectives: antecedents, consequences, boundary conditions, and theoretical mechanisms.

2.1.1 Antecedents of Workplace Loneliness

Antecedents of workplace loneliness can be broadly categorized into environmental and individual factors. Environmental antecedents include: (1) organizational-level factors such as size and hierarchy. Gumbert and Boyd (1984) found that individuals transitioning from large to small organizations experienced the deepest loneliness. However, Ozcelik and Barsade (2011) found no effect of organization size on workplace loneliness. Bell et al. (1990) reported a negative relationship between hierarchical level and loneliness, while Allison (1997) and Quick et al. (2000) found a positive relationship. More complexly, Wright (2012) found no significant correlation. The relationship between organizational level and workplace loneliness likely involves boundary conditions requiring future investigation. (2) Job characteristics: excessive job demands and lack of resources both contribute to workplace loneliness. High job demands such as workload and working hours lead to burnout and increased loneliness (Altaf & Awan, 2011; Bell et al., 1990; Howard & Mallory, 2008). Lack of resources, such as insufficient organizational support and leader feedback, represents important triggers (Galek et al., 2011; Wright, 2005). (3) Interpersonal environmental factors: Wright and Silard (2021) identify three types of workplace interpersonal environmental factors. First, interpersonal climate—positive climates such as alliance climate (Wan & Cui, 2019) foster trust, mutual care, helping, and appreciation, thereby alleviating loneliness (Erdil & Ertosun, 2011). Conversely, negative climates such as fear or competition reduce relationship quality and cause loneliness (Wright, 2005). Second, individuals' positions in organizational networks (Liu et al., 2012) affect loneliness. When employees feel mismatched with mainstream organizational culture, they perceive themselves as peripheral, experiencing exclusion and disconnection that intensifies loneliness. Third, negative interpersonal events such as bullying, discrimination, harassment, conflict, and ostracism significantly impair employees' ability to integrate into the organization, generating intense loneliness (Kuriakose et al., 2019; Li et al., 2019).

Individual-level antecedents include personality, core self-evaluation, social intelligence, work values, socioeconomic status, education, power, personal cognition, and motivation. (1) Personality: personality-driven behaviors affect relationship quality and thus workplace loneliness. Introverts' poor social skills reduce interpersonal attraction and increase loneliness (Saklofske et al., 1986). Shyness and social anxiety hinder relationship building (Cheek & Busch, 1981). Conversely, extraversion—associated with warmth and sociability—enhances relationship quality and reduces loneliness (Wilt et al., 2017). Additionally, personality influences desire for relationships. For instance, individuals with high attachment anxiety intensely crave intimate relationships, fear rejection, and experience greater loneliness (Wright & Silard, 2021). Highly independent employees are less likely to experience workplace loneliness due to minimal desire for social connections (Wright & Silard, 2021). (2) Core self-evaluation negatively correlates with workplace loneliness (Anand & Mishra, 2021). (3) Social intelligence, a key indicator of interpersonal competence, negatively correlates with workplace loneliness (Silman & Dogan, 2013). (4) Work values: self-transcendence, self-enhancement, tradition, and openness to change all negatively correlate with workplace loneliness (Yilmaz, 2011). (5) Socioeconomic status, education, and power: lower income and education increase loneliness (Page & Cole, 1991), while powerful individuals experience less loneliness (Foulk et al., 2020; Waytz et al., 2015). (6) Personal cognition and attitudes: competitive employees who desire to outperform others struggle to trust and form intimate relationships, so competitive mindset positively correlates with workplace loneliness (Wright, 2005). Positive cognitive beliefs such as workplace spirituality also alleviate loneliness (Ghadi, 2017). (7) Motivation: social avoidance motivation positively correlates with loneliness (Elliot et al., 2006). Prevention focus positively correlates with loneliness, while promotion focus negatively correlates with it (Park & Baumeister, 2015).

2.1.2 Consequences of Workplace Loneliness

We examine consequences across three domains: work attitudes, work behaviors, and physical/mental health. (1) Work attitudes: workplace loneliness affects job satisfaction, organizational commitment, work engagement, and turnover intentions. The relationship between loneliness and job satisfaction remains uncertain. Wright (2005) found a negative correlation, yet a survey of Chinese migrant workers found that lonely workers reported higher job satisfaction (Chan & Qiu, 2011), suggesting potential boundary conditions. Beyond this, numerous studies demonstrate negative relationships between workplace loneliness and organizational commitment and work engagement, and a positive relationship with turnover intentions (Xu et al., 2019; Wang et al., 2019; Chen et al., 2021; Wright, 2005; Ayazlar & Güzel, 2014). (2) Work behaviors: workplace loneliness affects job performance, organizational citizenship behavior (OCB), innovative behavior, and counterproductive work behavior. Researchers generally agree that loneliness reduces job performance. Perlman and Joshi (1987) found that lonely employees expend extra energy adapting to the organization, diverting

attention from work and impairing performance. Ozcelik and Barsade (2018) reported that loneliness creates interpersonal distance, making employees seem less approachable and harder to collaborate with. Lam and Lau (2012) found loneliness negatively correlates with OCB. Peng et al. (2017) found it negatively correlates with innovative behavior. Promsri (2018) found it positively correlates with counterproductive work behavior. (3) Physical and mental health: loneliness adversely affects employee well-being. It significantly increases work stress (Wright, 2005). Evolutionarily, loneliness signals environmental danger, triggering anxiety, fear, and other negative emotions (Cacioppo et al., 2014). Consequently, workplace loneliness positively correlates with emotional exhaustion (Anand & Mishra, 2021). Loneliness is also closely linked to depression; lonely individuals develop negative self-perceptions (Rokach, 2013) and experience stronger depressive symptoms (Mushtaq et al., 2014). Research shows workplace loneliness negatively impacts subjective well-being (Erdil & Ertosun, 2011) and physical health, causing poor sleep quality, fatigue (Robinson & Marientette, 2014), elevated blood pressure (Hawkey et al., 2010), and if prolonged and severe, may lead to immune system dysfunction, cardiovascular disease, increased suicide risk, and cancer (Mushtaq et al., 2014).

2.1.3 Boundary Conditions of Workplace Loneliness Effects

Current boundary conditions fall into two categories: personal and environmental factors. Personal factors include future work self-salience, political skill, self-esteem, and Big Five personality traits. Environmental factors include transformational leadership, leader care, organizational support, team cohesion, team loneliness, coworker loneliness, anger culture, and care culture. At the personal level, when employees have high future work self-salience, the negative effect of loneliness on work engagement weakens (Xu et al., 2019). Strong political skill mitigates loneliness experienced by low-power individuals (Foulk et al., 2020). For low-self-esteem employees, workplace loneliness leads to stronger work alienation and lower subjective well-being (Mohapatra et al., 2020). Employees high in neuroticism experience more loneliness when organizational trust is low, whereas those high in openness experience less loneliness under the same conditions (Wan & Cui, 2019). At the environmental level, transformational leadership buffers the negative effect of loneliness on work engagement (Xu et al., 2019). Leader care mitigates the negative relationship between workplace loneliness and LMX (Peng et al., 2017). Organizational support alleviates work alienation and reduced well-being caused by loneliness (Mohapatra et al., 2020). A caring organizational climate weakens the positive relationship between loneliness and perceived coworker distance, whereas an anger climate strengthens it (Ozcelik & Barsade, 2018). Strong coworker loneliness intensifies the negative relationship between individual loneliness and affective commitment (Ozcelik & Barsade, 2018), while strong team loneliness intensifies the negative relationship between loneliness and trust in others (Chen et al., 2021).

2.1.4 Theoretical Mechanisms in Workplace Loneliness Research

Existing research has applied six theories: social exchange theory, approach-avoidance theory, social capital theory, affective events theory, feelings-as-information theory, and job demands-resources theory. These can be categorized into three types. The first type focuses on negative emotional experiences caused by loneliness to infer its detrimental effects. For example, Wang et al. (2019) used affective events theory to explain how loneliness-induced negative emotions harm LMX and work engagement. Xu et al. (2019) proposed that negative emotions from loneliness reflect resource depletion and high job demands, thus reducing work engagement. Peng et al. (2017) used feelings-as-information theory to explain how loneliness, as a negative emotion, directs attention to negative information, thereby reducing creativity. The second type derives negative effects from loneliness reflecting poor workplace relationship quality. Some studies note that loneliness indicates dissatisfaction with workplace relationships, linking it to negative social exchanges. For instance, Lam et al. (2012) used social exchange theory to argue that loneliness negatively impacts LMX and team-member exchange, reducing OCB. Chen et al. (2019) applied social capital theory, showing that leader loneliness impairs trust-building with teams, increasing turnover intentions. Ozelik and Barsade (2018) used affective social exchange theory to demonstrate that lonely employees develop negative affective exchanges with coworkers, reducing job performance. The third type focuses on theoretical mechanisms explaining loneliness formation, which remains scarce. Anand and Mishra (2021) used approach-avoidance theory to explain antecedents, finding that approach-oriented personal characteristics like high core self-evaluation negatively correlate with loneliness, consistent with previous findings that promotion focus negatively correlates with loneliness (Park & Baumeister, 2015).

In summary, prior research has advanced understanding of workplace loneliness antecedents, effects, and mechanisms, but several gaps remain. First, antecedent research has followed two separate paths—personal and environmental factors—limiting comprehensive understanding. Workplace loneliness reflects perceived deficiencies in workplace relationships, making interpersonal interaction processes critical. Such interactions involve person-environment dynamics, yet few studies examine how person-environment fit influences loneliness (Wright, 2005). Second, research has focused primarily on negative consequences, with little knowledge about coping strategies. While psychology, medicine, and sociology have long studied loneliness coping (Rokach & Brock, 1998), organizational research on employee or organizational coping remains scarce. Additionally, although studies have identified consequences, intermediate mechanisms remain underexplored. Third, most theoretical mechanisms adopt an outcome-based perspective, neglecting process-based understanding. This outcome perspective treats loneliness as a static result—either a negative emotional state or fixed negative interpersonal condition—ignoring employees' proactive self-regulation.

Most research portrays lonely employees as passive victims whose negative relationship evaluations inevitably produce negative behaviors, overlooking the role of spontaneous, active self-regulation.

2.2 Workplace Loneliness Research from a Regulatory Focus Fit Perspective

Wright and Silard (2021) argue that when actual workplace relationships fall short of expected levels, employees perceive relational deficiencies and experience loneliness. This reflects workplace loneliness as a psychological experience resulting from unfulfilled social goals. Following this logic, we propose understanding workplace loneliness antecedents and effects through the lens of self-regulation in personal goal pursuit. Specifically, we apply regulatory fit theory to explain both antecedents and consequences of workplace loneliness.

Regulatory fit theory builds on Higgins' s (1998) regulatory focus theory, which posits that people develop two regulatory foci based on different needs in goal pursuit: promotion focus and prevention focus. Promotion focus concerns attaining positive outcomes—growth, advancement, and development needs—whereas prevention focus concerns avoiding negative outcomes—safety and security needs. While regulatory focus theory has been applied primarily in achievement contexts (Li et al., 2010; Li & Shang, 2011; Mao, 2017), some research has extended it to social domains (Elliot et al., 2006; Spithoven et al., 2017). Throughout life, people strive for positive and stable social relationships, employing different self-regulatory processes. Promotion focus increases emphasis on strengthening social connections, while prevention focus emphasizes eliminating threats to social connections and avoiding social exclusion. Existing research supports these relationships: high prevention focus increases avoidance-oriented interpersonal behaviors and loneliness (Park & Baumeister, 2015), whereas high promotion focus, which actively promotes relationship development, negatively correlates with loneliness (Park & Baumeister, 2015).

Although regulatory focus theory captures different behavioral tendencies in goal pursuit, it overlooks how person-environment interactions affect self-regulation during goal pursuit. To address this limitation, Higgins (2000) proposed regulatory fit theory, which suggests that when the external environment or interaction partners match an individual' s regulatory focus, satisfaction and effort increase. Under regulatory fit, employees feel they are doing things correctly, their goal-pursuit methods are validated by the environment, and this sense of correctness enhances motivation and social interaction engagement. Since developing high-quality relationships and avoiding workplace loneliness involves person-environment interaction, regulatory fit theory offers a more comprehensive perspective than regulatory focus theory alone.

3. Research Proposals

This paper uses regulatory fit theory as an overarching framework to explore both prevention mechanisms (antecedents) and coping mechanisms (consequences) of workplace loneliness. Specifically, we propose three sub-studies: Study 1 examines how leader-follower regulatory focus match (including promotion and prevention focus) affects LMX and subsequent workplace loneliness. Study 2 investigates how employee-team regulatory focus match affects TMX and subsequent workplace loneliness. Study 3 explores how lonely employees adopt promotion- or prevention-oriented coping strategies, how team regulatory climate influences these choices, and how different coping strategies affect relational and innovative performance.

3.1 Study 1: Effects of Leader-Follower Regulatory Focus Match on Workplace Loneliness: The Mediating Role of LMX

Based on different regulatory foci, interpersonal regulatory fit can be categorized as promotion fit or prevention fit. Study 1 examines how leader-follower promotion and prevention focus match each affect LMX and workplace loneliness. As shown in Figure 1, leader-follower regulatory focus combinations create match and mismatch scenarios based on high/low levels. Match scenarios—where promotion or prevention focus levels align—facilitate positive exchange relationships and alleviate loneliness through regulatory fit. Promotion focus match includes two conditions: high subordinate-high leader and low subordinate-low leader. Mismatch includes: high subordinate-low leader and low subordinate-high leader. Similar logic applies to prevention focus match (high-high, low-low) and mismatch (leader high-subordinate low, leader low-subordinate high).

3.1.1 Differential Effects of Leader-Follower Regulatory Focus Match vs. Mismatch on LMX Compared to mismatch, leader-follower promotion focus match enhances LMX for two reasons. First, matched promotion focus facilitates shared attitudes toward achievement goals, promoting LMX (Zhang et al., 2012; Zhang et al., 2021). Both high-promotion focus parties possess stronger achievement motivation and prefer challenging goals. Aligned challenging goals enhance mutual goal identification, advancing LMX development. For example, Cai et al. (2021) found that matched achievement need between leaders and followers positively correlates with LMX. Conversely, promotion focus misalignment creates divergent attitudes toward challenging goals, straining relationship development. Low-promotion focus employees, being less willing to take risks, experience greater pressure when facing high-promotion focus leaders (Cai et al., 2021). Second, matched promotion focus produces similar action styles in goal pursuit, reducing conflict and enhancing interaction quality. High-promotion focus individuals are more sensitive to achievement-related information, optimistic about the future, and more willing to take risks (Hazlett et al., 2011). Similar action styles enable 默契 cooperation, further improving LMX. Consistently, Parent-Rochelleau et al. (2021) found that matched opti-

mism between leaders and followers increases vigor in goal pursuit and reduces role conflict.

Similarly, leader-follower prevention focus match enhances LMX more than mismatch. First, matched prevention focus facilitates shared attitudes toward responsibility and security needs, improving LMX. High-prevention focus individuals are highly attuned to security needs and more understanding of others' safety concerns. High-prevention focus dyads mutually understand and validate security needs, evaluating their relationship more positively. Likewise, when both parties have low prevention focus, violations of security needs are rare (Shin et al., 2017; Johnson et al., 2017). For example, Bunjak et al. (2019) found that when leaders and followers share matched pessimistic cognition—being similarly sensitive to negative consequences—this match produces similar conservative work styles, helps manage anxiety around risks, increases follower identification with the leader, and positively affects interactions. Under mismatch, the party with higher security needs may feel ignored, triggering interpersonal conflict and negative relationship evaluations. Second, matched prevention focus maintains higher motivation and effort for fulfilling responsibilities and risk avoidance. Matched prevention focus means shared attitudes toward responsibility and risk aversion. When both are high, followers more easily identify with the leader's vigilant, rigorous work style, feel they are doing things correctly, develop stronger work motivation, and exhibit higher safety performance and maintenance-oriented OCB (Shin et al., 2017).

Empirical research provides indirect evidence for these effects. Bian et al. (2016) found that individuals give more positive evaluations to those with matching regulatory focus. Vaughn et al. (2010) found that matched regulatory focus between interaction partners increases interpersonal trust. Hamstra et al. (2014) found that leader-follower regulatory focus match makes followers feel valued. Johnson et al. (2017) found that both promotion and prevention focus match positively affect followers' affective and normative commitment. Shin et al. (2017) found that promotion focus match positively correlates with change-oriented OCB, while prevention focus match correlates with maintenance-oriented OCB. These findings demonstrate that regulatory focus match promotes positive interpersonal interactions. Therefore, we propose:

Proposition 1.1: Compared to promotion focus mismatch between employees and leaders, promotion focus match results in higher perceived LMX.

Proposition 1.2: Compared to prevention focus mismatch between employees and leaders, prevention focus match results in higher perceived LMX.

3.1.2 Differential Effects of Two Match Conditions on LMX Study 1 posits that between the two promotion focus match conditions (high-high vs. low-low), high-high match promotes LMX more effectively. When both leader and follower have high promotion focus, they benefit from regulatory fit and exhibit proactive behaviors that enhance LMX. High-promotion focus leaders display

more transformational leadership, use passionate communication to encourage employees, and engage in exploratory behaviors that create innovation opportunities (Kark & Van Dijk, 2008). High-promotion focus followers reciprocate with positive behaviors like innovation and voice (Neubert et al., 2013), generating more frequent positive interactions.

Conversely, for prevention focus match conditions (high-high vs. low-low), low-low match enhances LMX more than high-high match. While prevention focus match is better than mismatch for meeting security needs and improving LMX, high prevention focus itself hinders relationship development. High-prevention focus individuals maintain distance due to strong self-protection motivation (Shaver & Mikulincer, 2007), prefer superficial relationships (Kark & Van Dijk, 2008), and use avoidance-oriented interaction styles. Therefore, low-low prevention focus match promotes LMX more effectively.

Proposition 1.3: Between the two leader-follower promotion focus match conditions, high-high match results in higher LMX than low-low match.

Proposition 1.4: Between the two leader-follower prevention focus match conditions, low-low match results in higher LMX than high-high match.

3.1.3 Differential Effects of Two Mismatch Conditions on LMX Study 1 argues that between the two promotion focus mismatch conditions (leader high-subordinate low vs. leader low-subordinate high), leader high-subordinate low promotes LMX more than the reverse. The leader low-subordinate high condition creates more negative impact because low-promotion focus leaders, being less ambitious and more concerned with maintaining their status and power (Guillén & Karelaia, 2012), view ambitious employees as threats and evaluate them negatively, hindering LMX development. In contrast, when leaders have high promotion focus, they exhibit more positive leadership behaviors like transformational leadership (Kark et al., 2018; Johnson et al., 2017; Kark & Van Dijk, 2019) that influence and change employees, who then adjust their behaviors to meet leader expectations, reducing mismatch negativity.

For prevention focus mismatch (leader high-subordinate low vs. leader low-subordinate high), leader low-subordinate high results in higher LMX. High-prevention focus leaders are more sensitive to subordinate errors and develop negative impressions of those who make mistakes. High-prevention focus employees, while not proactively seeking development opportunities, work carefully and responsibly. They are highly sensitive to negative feedback and use it to improve behavior (Van Dijk & Kluger, 2011), demonstrating higher safety performance and being evaluated as conscientious and responsible (Kark et al., 2015). In high-prevention focus teams, low-prevention focus employees face more negative evaluations due to increased monitoring (Beersma et al., 2013) and stricter behavioral norms (Shin, 2016), reducing trust and TMX.

Proposition 1.5: Between the two leader-follower promotion focus mismatch conditions, leader high-subordinate low results in higher perceived LMX than

leader low-subordinate high.

Proposition 1.6: Between the two leader-follower prevention focus mismatch conditions, leader low-subordinate high results in higher perceived LMX than leader high-subordinate low.

3.1.4 Effects of Leader-Follower Regulatory Focus Match on Workplace Loneliness: The Mediating Role of LMX Study 1 proposes that high LMX resulting from regulatory focus match constitutes an important component of high-quality workplace relationships that alleviates loneliness. Wright and Silard (2021) identify actual relationship quality as a key antecedent of workplace loneliness, with high-quality relationships preventing and reducing loneliness. High-quality workplace relationships feature trust, mutual care, and respect. High-quality LMX represents one such relationship. For employees, leaders largely represent the organization; high LMX means strong employee-organization connection, enhancing organizational commitment, trust, and belonging. High LMX also signifies insider status in the leader's social network. Therefore, high-quality LMX effectively reduces workplace loneliness. Empirical research has confirmed the negative relationship between workplace loneliness and LMX (Lam et al., 2012; Peng et al., 2017). Thus, leader-follower regulatory focus (mis)match influences workplace loneliness through LMX.

Proposition 1.7: The effect of employee-leader promotion focus (mis)match on workplace loneliness is mediated by LMX.

Proposition 1.8: The effect of employee-leader prevention focus (mis)match on workplace loneliness is mediated by LMX.

3.2 Study 2: Effects of Employee-Team Regulatory Focus Match on Workplace Loneliness: The Mediating Role of TMX

Study 2 explores how employee-team regulatory focus (mis)match affects TMX and workplace loneliness. Regulatory fit effects occur not only in dyadic interactions (e.g., leader-follower) but also in individual-team interactions. Regulatory focus operates at both individual and team levels (Rietzschel, 2011). For example, accounting teams naturally develop a prevention focus, while sales teams likely exhibit high promotion focus. Collective regulatory focus reflects team expectations about how members should pursue goals (Faddegon et al., 2008). When employees join a team, they gain opportunities to use certain self-regulatory strategies. In high-promotion focus teams, members typically use eager goal-pursuit strategies, taking risks and seizing success opportunities. If employees also have strong promotion focus, team and individual promotion focus match, making employees feel their actions are correct, increasing motivation and positively affecting team interactions.

3.2.1 Differential Effects of Employee-Team Regulatory Focus Match vs. Mismatch on TMX Study 2 posits that employee-team promotion focus

match results in higher TMX than mismatch for two reasons. First, matched promotion focus facilitates shared achievement-oriented work values, promoting TMX. Value similarity increases reciprocity among team members (Dose, 1999). High-promotion focus teams encourage ambitious, development-oriented values (Shin et al., 2016), which high-promotion focus employees also prioritize (Sassenberg & Scholl, 2013). This match increases cooperation willingness and TMX. Conversely, when employee promotion focus is high but team promotion focus is low, the team cannot provide challenging tasks, reducing positive attitudes and creating conflict, lowering TMX. When employee promotion focus is low but team promotion focus is high, employees may resist team changes, causing conflict and reducing TMX. Second, matched promotion focus facilitates reciprocal behaviors that meet partners' needs during achievement pursuit, enhancing TMX. High-quality TMX stems from reciprocity like information exchange and helping. Promotion focus match helps employees obtain valuable information from similar peers (Righetti et al., 2011). Under mismatch, information from dissimilar members has limited value, reducing social interaction motivation (Ehrhardt & Ragins, 2019) and limiting TMX development. Therefore, when employee and team promotion focus align, shared work values and reciprocal motivation enhance TMX.

Similarly, employee-team prevention focus match results in higher TMX than mismatch. First, matched prevention focus creates similar cognitive and work styles, improving TMX. Similar work attitudes help employees integrate into teams (Van der Vegt, 2002). When employees and team members share similar prevention focus, they equally value responsibility, enabling 默契 cooperation and enhancing TMX. Mismatch may harm TMX—for example, low-prevention focus employees in high-prevention focus teams may receive negative evaluations for careless attitudes, while high-prevention focus employees in low-prevention focus teams may be seen as burdensome when offering defensive improvement suggestions (Li et al., 2017). As Zhao et al. (2021) found, high conscientiousness fit between employee and team fosters trust and knowledge sharing, enhancing TMX. Second, matched prevention focus reduces uncertainty and meets security needs, improving TMX. Chattopadhyay et al. (2016) note that employees evaluate dissimilar members more negatively because dissimilarity creates uncertainty that threatens security needs, especially for high-prevention focus employees. Matched prevention focus means all members' security needs are met. In interdependent team contexts, similar prevention focus reduces uncertainty about partners because it signals similar cognitive and behavioral styles and needed information. Similar styles enhance team identification and cooperation (Pierro et al., 2015; Jansen & Kristof-Brown, 2005; Seong & Choi, 2014). For example, Britton (2014) found that when employees' safety motivation matches team safety climate, employees perform more safety behaviors and reduce stress from risk aversion.

Proposition 2.1: Compared to promotion focus mismatch between employee and team, promotion focus match results in higher perceived TMX.

Proposition 2.2: Compared to prevention focus mismatch between employee and team, prevention focus match results in higher perceived TMX.

3.2.2 Differential Effects of Two Match Conditions on TMX Study 2 posits that between the two promotion focus match conditions (high-high vs. low-low), high-high match results in higher TMX. When both employee and team members have high promotion focus, they benefit from regulatory fit and exhibit proactive behaviors that promote TMX. High-promotion focus teams encourage exploratory learning—seeking unfamiliar new knowledge (Li et al., 2019)—which increases information exchange because coworker communication is crucial for acquiring new knowledge. Frequent information exchange greatly enhances TMX. Additionally, high promotion focus means members are more sensitive to potential benefits of daily interactions, actively expanding relationships and reciprocity, thus improving TMX.

Conversely, between the two prevention focus match conditions (high-high vs. low-low), low-low match results in higher TMX. Although prevention focus match provides similar work attitudes and doesn't threaten security needs, high prevention focus causes members to overemphasize safety and avoiding negative outcomes, hindering new connections and information seeking. High-prevention focus teams encourage exploitative learning—refining existing knowledge—which blocks access to heterogeneous knowledge (Li et al., 2019) and impedes information exchange. Moreover, high prevention focus increases sensitivity to interaction risks, making members more cautious and limiting positive interpersonal interactions.

Proposition 2.3: Between the two employee-team promotion focus match conditions, high-high match results in higher TMX than low-low match.

Proposition 2.4: Between the two employee-team prevention focus match conditions, low-low match results in higher TMX than high-high match.

3.2.3 Differential Effects of Two Mismatch Conditions on TMX Study 2 argues that between the two promotion focus mismatch conditions (team high-employee low vs. team low-employee high), team high-employee low results in higher TMX. Although both mismatch conditions harm interactions, team low-employee high creates more negative impact. When team promotion focus is low but employee promotion focus is high, the employee's risk-taking 倾向 may harm other members' interests (Zaal et al., 2015), causing resistance and reducing TMX. Conversely, when team promotion focus is high but employee promotion focus is low, the high-promotion focus team can compensate through other characteristics. High-promotion focus teams value exploratory learning, where employees admit shortcomings and learn from others (Owens & Hekman, 2015). This beneficial exchange and learning better accommodates differences and promotes TMX.

For prevention focus mismatch (team high-employee low vs. team low-employee

high), team low-employee high results in higher TMX. In high-prevention focus teams, tolerance for rule violations is lower, and low-prevention focus employees receive more negative evaluations. High-prevention focus teams exhibit increased monitoring (Beersma et al., 2013) because they are sensitive to failure and errors. This monitoring climate reduces trust and TMX. High-prevention focus teams emphasize strict procedural norms, making norm violations easily detected and triggering negative interpersonal treatment like ostracism (Shin, 2016). This environment causes employees to adopt reserved, avoidant communication, harming TMX. In low-prevention focus teams, although high-prevention focus employees have different work styles, lower monitoring and defensiveness reduce negative feedback, causing less TMX damage.

Proposition 2.5: Between the two employee-team promotion focus mismatch conditions, team high-employee low results in higher TMX than team low-employee high.

Proposition 2.6: Between the two employee-team prevention focus mismatch conditions, team low-employee high results in higher TMX than team high-employee low.

3.2.4 Effects of Employee-Team Regulatory Focus Match on Workplace Loneliness: The Mediating Role of TMX TMX reflects relationship quality between employees and team members. High-quality TMX significantly increases coworker satisfaction and workplace friendship (Zou & Liu, 2011), representing an important component of high-quality workplace relationships. High TMX enhances perceived team cohesion and affective commitment, creating stronger belongingness and reducing workplace loneliness. Empirical research has confirmed the negative relationship between workplace loneliness and TMX (Lam et al., 2012). Thus, employee-team regulatory focus (mis)match influences workplace loneliness through TMX.

Proposition 2.7: The effect of employee-team promotion focus (mis)match on workplace loneliness is mediated by TMX.

Proposition 2.8: The effect of employee-team prevention focus (mis)match on workplace loneliness is mediated by TMX.

3.3 Study 3: Effects of Workplace Loneliness on Employee Performance: The Mediating Role of Social Behavior and Moderating Role of Team Regulatory Climate

Study 3 examines how workplace loneliness affects relational and innovative performance, the mediating role of social behavior, and the moderating role of team regulatory climate. Based on regulatory fit theory, we propose that employees choose coping strategies matching their team's regulatory climate. Different coping strategies include promotion-oriented social approach behavior and prevention-oriented social avoidance behavior. These different coping approaches affect behavior and performance. Specifically, promotion-oriented so-

cial coping enhances relational and innovative performance, whereas avoidance-oriented social coping harms both.

3.3.1 Effects of Workplace Loneliness on Social Behavior: The Moderating Role of Team Regulatory Climate Study 3 first examines the relationship between workplace loneliness and two coping behaviors (promotion-oriented social behavior and avoidance-oriented social behavior) and the moderating effect of team regulatory climate. Wright and Silard (2021) argue that unmet social goals cause loneliness, which threatens belongingness and motivates coping responses. Regulatory focus theory suggests that unmet goals (e.g., gaining social connection) lead employees to choose different strategies. Based on regulatory fit theory, we infer that lonely employees select coping strategies matching environmental signals.

Lonely employees may adopt either promotion or prevention coping strategies. Most research suggests lonely individuals prefer prevention strategies. Feeling threatened, they adopt defensive strategies to avoid further psychological harm, showing anxiety, caution, and withdrawal (Cacioppo et al., 2006). However, some scholars argue lonely individuals may adopt promotion strategies. Cacioppo et al. (2014) note that loneliness activates desire for social connection, potentially prompting proactive social behavior. Molden et al. (2009) found that when people strongly desire social relationships, like lonely individuals, they interact more urgently and intensively. Lucas et al. (2010) found that when promotion focus is primed, lonely individuals may actively engage in social activities. Qualter et al. (2015) systematically explained different coping motivations: under promotion focus, lonely individuals desire increased belongingness; under prevention focus, they are sensitive to social threats and adopt avoidance. Resolution depends on which motivation dominates—promotion focus enables reconnection and reduces loneliness, whereas prevention focus perpetuates loneliness through defensive avoidance.

Since lonely employees may adopt either strategy, Study 3 examines boundary conditions affecting this choice. Regulatory fit theory states that when individual regulatory focus matches behavioral strategies, motivation increases. Fit occurs not only between individual focus and action but also between behavior and environmental signals. Individuals in promotion-signaled environments show more promotion behavior; those in prevention-signaled environments show more prevention behavior. Therefore, we propose that lonely employees' coping choices are influenced by environmental regulatory signals. When employees perceive strong promotion climate, they sense fit between promotion behavior and environment, leading them to choose promotion coping strategies like proactive interpersonal interaction. When employees perceive strong prevention climate, they sense fit between prevention behavior and environment, leading them to choose prevention coping strategies like consciously avoiding coworker interaction.

Proposition 3.1: Team promotion climate moderates the relationship between

workplace loneliness and promotion-oriented social behavior, such that lonely employees perceiving strong team promotion climate exhibit more promotion-oriented social behavior.

Proposition 3.2: Team prevention climate moderates the relationship between workplace loneliness and avoidance-oriented social behavior, such that lonely employees perceiving strong team prevention climate exhibit more avoidance-oriented social behavior.

3.3.2 Effects of Workplace Loneliness on Employee Performance: A Moderated Mediation Model To evaluate coping effectiveness, Study 3 further examines how different social behaviors affect subsequent relational and innovative performance. Relational performance does not directly involve core technical activities but creates a broad socio-psychological environment conducive to organizational functioning, including interpersonal facilitation and job dedication (van Scotter & Motowidlo, 1996). Innovative performance refers to employees generating novel, feasible, and valuable products, processes, methods, or ideas (Han et al., 2007). We propose that promotion-oriented social behavior enhances both relational and innovative performance. When employees use promotion-oriented social behavior to cope with loneliness, they build new social exchange relationships, gaining external knowledge and information that facilitates innovative ideas and improves innovative performance. More promotion-oriented social behavior also means employees are willing to help colleagues and cooperate to achieve challenging goals, thereby enhancing relational performance. Conversely, avoidance-oriented social behavior signals distrust and unapproachability, reducing interaction frequency (Ozcelik & Barsade, 2018), creating information silos that harm innovative performance. Avoidance also means refusing to provide information or help, reflecting unwillingness to cooperate, thus negatively correlating with relational performance.

Proposition 3.3: When team promotion climate is strong, the positive relationship between workplace loneliness and promotion-oriented social behavior is stronger, positively affecting relational and innovative performance.

Proposition 3.4: When team prevention climate is strong, the positive relationship between workplace loneliness and avoidance-oriented social behavior is stronger, negatively affecting relational and innovative performance.

4. Theoretical Framework

This paper adopts regulatory fit theory as its overarching framework. Higgins (2000) proposed that when external environments or interaction partners match employees' regulatory focus, satisfaction and effort increase. Under regulatory fit, employees are more likely to exhibit behavior matching their regulatory focus and feel they are acting correctly. This sense of correctness strengthens work motivation and social interaction engagement. While regulatory fit theory has been widely applied in achievement contexts, finding that fit increases effort and

performance (Spiegel et al., 2004), organizational behavior research has rarely examined how regulatory fit affects interpersonal relationships. Hamstra et al. (2013) called for expanding regulatory fit research into interpersonal domains. This expansion is crucial because regulatory focus affects not only achievement goal pursuit but also social goal pursuit (Winterheld & Simpson, 2011), and high-quality relationships are fundamental to alleviating workplace loneliness (Wright & Silard, 2021). Thus, this paper applies regulatory fit theory to workplace loneliness research to advance both literatures.

Higgins (2000) distinguished two types of regulatory fit: interpersonal fit (between individuals) and intrapersonal fit (within individuals). Based on this distinction, we propose antecedent (Studies 1 and 2) and consequence (Study 3) research. Interpersonal fit means that because individuals differ in regulatory focus strength, match or mismatch occurs between people. When regulatory focus matches, interaction partners more easily experience fit from each other's behavior, positively affecting interactions (Vaughn et al., 2010). We propose that regulatory focus match between employees and organizational members (leaders or teammates) affects interaction quality and thus workplace loneliness. This is the focus of Studies 1 and 2. Intrapersonal fit means individuals perceive match between their regulatory focus and environmental signals, feeling their self-regulatory strategy is correct and strengthening behavioral motivation. For example, high-prevention focus individuals show more prevention behavior when environmental prevention signals are present, and vice versa for high-promotion focus individuals. We infer that employees' loneliness coping follows regulatory fit principles—employees choose strategies matching environmental signals. Thus, team promotion climate elicits more promotion coping (e.g., promotion-oriented social behavior), while team prevention climate elicits more prevention coping (e.g., avoidance-oriented social behavior). Intrapersonal fit helps us understand how employees choose different strategies to cope with loneliness based on environment, which is the focus of Study 3. In summary, regulatory fit theory serves as an overarching framework for examining both prevention mechanisms (antecedents) and coping mechanisms (consequences) of workplace loneliness.

This paper presents a theoretical model of workplace loneliness antecedents and coping consequences (Figure 2), extending existing research in several ways:

Figure 2. Overall Research Framework

First, we reconceptualize workplace loneliness research by using novel polynomial regression and response surface analysis to reveal its formation mechanisms. Current antecedent research suffers from a disconnect between personal and environmental factors, treating them as independent paths and neglecting that workplace loneliness emerges from person-environment interaction. We return to the conceptual core—that loneliness reflects deficient workplace relationship quality—and examine how person-environment (e.g., employee and social targets) interactions affect loneliness. Rather than superficially examining perceived person-environment fit, we employ polynomial regression and response surface analysis to show how employee-leader and employee-team matches af-

fect interaction quality and subsequently loneliness, highlighting the intimate connection between loneliness and person-environment interaction.

Second, person-centered latent profile analysis can further test our propositions. Promotion and prevention focus are independent constructs, not opposite ends of a single dimension (Mao, 2017), meaning both can coexist within individuals. Person-centered latent profile analysis can reveal regulatory focus combinations at the individual level. Previous research identifies three profiles: promotion-dominant (high promotion, low prevention), prevention-dominant (high prevention, low promotion), and high regulatory focus (high on both; Liu & Yao, 2019; Chen et al., 2017). Regulatory fit stems from clear regulatory focus styles matching others or environments. When both foci are high within an individual, this reflects balancing contradictory tensions (Zhang et al., 2019; Smith & Lewis, 2011), which may create uncertainty and contradictory perceptions that damage interpersonal regulatory fit (Beus et al., 2020; Tripathi et al., 2018; Niu & Liu, 2021). Our focus on regulatory fit is more relevant to clear regulatory focus profiles (promotion- or prevention-dominant). Specifically, employee-leader regulatory focus profile match may promote LMX (e.g., both promotion-dominant or both prevention-dominant), as may employee-team profile match promote TMX.

Third, based on regulatory fit theory, we systematically analyze the dynamic evolution of workplace loneliness in organizations. This paper is the first to incorporate goal-pursuit self-regulation processes into workplace loneliness research, reflecting its dynamic nature and empowering employees to actively cope. Inspired by Wright and Silard (2021), we view unfulfilled social goals as the root cause of loneliness. Through self-regulation of social goals at different levels, we reveal how employee-leader and employee-team matches affect loneliness via LMX and TMX. These social goals are not isolated—both LMX and TMX constitute high-quality workplace relationships, so future research could examine how they jointly affect loneliness. For example, can high-quality LMX compensate for low-quality TMX, or vice versa? This aligns with loneliness research showing that different relationship sources can compensate for deficits in others (e.g., online connections compensating for offline loneliness; Hood et al., 2018). Finally, goal pursuit is shaped by self-regulation, which is influenced by environmental signals and interaction partners, collectively creating the dynamic evolution and coping process of workplace loneliness in organizations. Through regulatory fit theory, we propose a more dynamic perspective on workplace loneliness, exploring how to activate employees' dynamic coping and self-regulation.

Fourth, examining consequences from a coping perspective provides new directions for explaining workplace loneliness mechanisms. Current mediation research on loneliness effects is unsystematic and often adopts a passive perspective, treating lonely employees as victims of negative experiences and studying detrimental impacts on attitudes, performance, behaviors, and well-being, while ignoring active coping responses triggered by loneliness. Cacioppo et al. (2014)

noted that loneliness has evolutionary value—like hunger, thirst, and pain, it triggers aversive feelings that signal unmet needs and motivate corrective action. Therefore, employees should not be viewed as passive loneliness recipients; we must examine active, spontaneous coping responses. Observing employees' spontaneous coping not only provides directions for managing and intervening in workplace loneliness but also deepens understanding of how loneliness affects behavior and performance.

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